

Master List of Settings for Current Transformers

	HEP	GOLD	POLARIZED P [^]
<i>Ags/Location/911B/CDC.911SWIC.DIGIO/</i>			
<i>1st device controls mux module in 911B, Room 222 to select the current transformer signals to be used in the given mode: Col. C2 = AGS., other for calibration control</i>			
BIX.XF_SELCTN	F15	A15	A15
AIX.XF_AGS.GAIN		11	10
<i>/pet/Booster/instrumentation/CurrentXfmr</i>			
<i>1st device controls mux module in 911B, Room 222, others are for calibration control</i>			
bix.xf_selctn	N58	29X	HP1
bix.xf_binpt.gain		53	16/17
bix.xf_bcbm.gain		36	109-117
<i>/pet/Booster/instrumentation/CurrentXfmr</i>			
<i>This page controls the settings (VFC Delay, Integrate Start, Integrate Stop/Hold, and Reset) for the integrator for Booster Input in 911B, Room 222.</i>			
bix.integ_dly width	1us	10,000us	1us
bix.integ_dly delay	88,000us	88,000us	88,000us
bix.integ_dly event ¹	37	51	37
bix.integ_rst width	2,450us	10us	2,450us
bix.integ_rst delay	1us	1us	1us
bix.integ_rst event	37	51	37
bix.integ_stp width	10,000us	10,000us	10,000us
bix.integ_stp delay ²	460us	900us	430us
bix.integ_str width	460us	900us	440us
bix.integ_str delay	2,450us	200us	2,470us
bix.integ_str event	37	51	37
<i>Ags/Location/A10_House/CDC.A10.DIGIO/</i>			
<i>This page is for controlling the A15 current transformer, therefore making these settings appropriate for runs in which the A15 transformer is used (i.e. Heavy Ions and Polarized Protons)</i>			
AMX.CIRCXF_CTRL ³		x10	x10
AMX.CIRCXF_GN	BBB (x1)	AAA (x100)	AAA (x100)
AMX.PROTON_TYPE	PRO	PPR	PPR
AMX.XF_GAIN ⁴	- - -don't care- - -	LOW <i>or</i> HIG	LOW

¹ CLD event 37 is Pseudo Peaker; CLD event 51 is TBEAM ON on the Booster Event Link.

² This setpoint should always match bix.integ_str width as the stop pulse is triggered from the start pulse. Also, column TrigSrc should have PrevEnd as its value.

³ 7-18-01: This was set to x1 to prevent saturation at 23e8 ions. Since this system was set up for x10 setting, the gain was added back in at the calibrator module front panel by using a 50Ω termination at the x10 gain input; 10-16-02 SpreadSheet gain x10, calibrator gain removed.

⁴ Used in conjunction with PROTON_TYPE to select the calibration pulse value. See Table 1.

Master List of Settings for Current Transformers, con't.

	HEP	GOLD	POLARIZED P^
Ags/Location/A10_House/CDC.A10.V202A/			
<i>This page is for controlling the AGS A15 calibration pulse (Ch. 1 from #1-8)</i>			
ADL.A15_XFCAL.CLK	N/A	1us	1us
ADL.A15_XFCAL.ST	N/A	1us	1us
ADL.A15_XFCAL..ST.C (CLD)	N/A	29	29 (AGS pre-pulse)
/pet/FECs/Instrumentation/Booster/LTB/Other			
<i>This page is for controlling the settings for BCBM.</i>			
bmdCircXfGainS	BBB (x1)	AAA (x100)	AAA (x100)
bmdCircXfPolS	NEG (x1)	POS (x10)	NEG (x1)
bliProtonTypeS	PRO	PPR	PPR
bliXfGainS ⁵	- - -don't care- - -	LOW <i>or</i> HIG	LOW
/pet/FECs/Instrumentation/Booster/LTB/202Timing			
<i>This page controls the trigger for the calibration pulse (on/off)</i>			
bmdCalStrt delay ⁶	2700us	2700us	2700us
bmdCalStrt width	10us	10us	10us
bmdCalStrt event	10	10	10
/pet/Booster/Timing/booster_Gauss_gen			
<i>This page is for controlling the timing settings for Booster Early & Booster Late.</i>			
BGN.EARLY_CBM.SP	17100	6090	15780
BGN.LATE_CBM.SP	52000	66000	53000
/pet/Ags/Timing/ags_Gauss_gen			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.A_TRANS_CBM.SP	71500	170000	75000
AGN.B_TRANS_CBM.SP	45000	148000	5700
Ags/Instrumentation/Current_xfmr/current_Xfmr			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.CBM.SP ⁷	900000	635000	230000
AGN.INJ_CBM.SP	122000	55000	160000
AGN.XCBM.SP	1900000	2100000	808000

⁵ Used in conjunction with bliProtonTypeS to select calibration pulse value. See Table 2.

⁶ The values here are suggested values, they may be changed as needed to move the pulse around

⁷ Numbers may vary depending on cycle and user preference (where to trigger V/F)

Master List of Settings for Current Transformers, con't.

	SILICON	IRON	DEUTERONS
Ags/Location/911B/CDC.911SWIC.DIGIO/			
<i>1st device controls mux module in 911B, Room 222 to select the current transformer signals to be used in the given mode: Col. C2 = AGS., other for calibration control</i>			
BIX.XF_SELCTN	A15	A15	A15
AIX.XF_AGS.GAIN			
Booster/instrumentation/CurrentXfmr			
<i>1st device controls mux module in 911B, Room 222, others are for calibration control</i>			
bix.xf_selctn	29X	29X	29X
bix.xf_binpt.gain			
bix.xf_bcbm.gain			
Booster/instrumentation/CurrentXfmr			
<i>This page controls the settings (VFC Delay, Integrate Start, Integrate Stop/Hold, and Reset) for the integrator for Booster Input in 911B, Room 222.</i>			
bix.integ_dly width	10,000us	10,000us	10,000us
bix.integ_dly delay	88,000us	88,000us	88,000us
bix.integ_dly event ⁸	51	51	51
bix.integ_rst width	10us	10us	10us
bix.integ_rst delay	1us	1us	1us
bix.integ_rst event	51	51	51
bix.integ_stp width	10,000us	10,000us	10,000us
bix.integ_stp delay ⁹	900us	900us	900us
bix.integ_str width	900us	900us	900us
bix.integ_str delay	100us	100us	200us
bix.integ_str event	51	51	51
Ags/Location/A10_House/CDC.A10.DIGIO/			
<i>This page is for controlling the A15 current transformer, therefore making these settings appropriate for runs in which the A15 transformer is used (i.e. Heavy Ions and Polarized Protons)</i>			
AMX.CIRCXF_CTRL	x10	x10	x10
AMX.CIRCXF_GN	AAA (x100)	AAA (x100)	AAA (x100)
AMX.PROTON_TYPE	PPR	PPR	PPR
AMX.XF_GAIN ¹⁰	LOW	LOW	HIG

⁸ CLD event 37 is Pseudo Peaker; CLD event 51 is TBEAM ON on the Booster Event Link.

⁹ This setpoint should always match bix.integ_str width as the stop pulse is triggered from the start pulse. Also, column TrigSrc should have PrevEnd as its value.

¹⁰ Used in conjunction with PROTON_TYPE to select the calibration pulse value. See Table 1.

Master List of Settings for Current Transformers, con't.

	SILICON	IRON	DEUTERONS
<i>Ags/Location/A10_House/CDC.A10.V202A/</i>			
<i>This page is for controlling the AGS A15 calibration pulse (Ch. 1 from #1-8)</i>			
ADL.A15_XFCAL.CLK	1us	1us	1us
ADL.A15_XFCAL.ST	1us	1us	1us
ADL.A15_XFCAL.ST.C (CLD)	29	29	29
<i>FECs/Instrumentation/Booster/LTB/Other</i>			
<i>This page is for controlling the settings for BCBM.</i>			
bmdCircXfGainS	AAA (x100)	AAA (x100)	AAA (x100)
bmdCircXfPolS	POS (x10)	POS (x10)	POS (x10)
bliProtonTypeS	PPR	PPR	PPR
bliXfGainS ¹¹	HIG	HIG	HIG
<i>FECs/Instrumentation/Booster/LTB/202Timing</i>			
<i>This page controls the trigger for the calibration pulse (on/off)</i>			
bmdCalStrt delay ¹²	2700us	2700us	2700us
bmdCalStrt width	10us	10us	10us
bmdCalStrt event	10	10	10
<i>Booster/Timing/booster_Gauss_gen</i>			
<i>This page is for controlling the timing settings for Booster Early & Booster Late.</i>			
BGN.EARLY_CBM.SP	8790	8790	6180
BGN.LATE_CBM.SP	53490	53490	50880
<i>Ags/Timing/ags_Gauss_gen</i>			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.A_TRANS_CBM.SP	22000	22000	144000
AGN.B_TRANS_CBM.SP	54000	54000	100000
<i>Ags/Instrumentation/Current_xfmr/current_Xfmr</i>			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.CBM.SP ¹³	200000	200000	1100000
AGN.INJ_CBM.SP	50000	50000	55000
AGN.XCBM.SP	1200000	1200000	2400000

¹¹ Used in conjunction with bliProtonTypeS to select calibration pulse value. See Table 2.

¹² These are suggested values, they may be changed as needed to move the calibration pulse

¹³ Numbers may vary depending on cycle and user preference (where to trigger V/F)

Master List of Settings for Current Transformers, con't.

COPPER			
Ags/Location/911B/CDC.911SWIC.DIGIO/			
<i>1st device controls mux module in 911B, Room 222 to select the current transformer signals to be used in the given mode: Col. C2 = AGS., other for calibration control</i>			
BIX.XF_SELCTN	A15		
AIX.XF_AGS.GAIN	3		
Booster/instrumentation/CurrentXfmr			
<i>1st device controls mux module in 911B, Room 222, others are for calibration control</i>			
bix.xf_selctn	29X		
bix.xf_binpt.gain	16		
bix.xf_bcbm.gain	109		
Booster/instrumentation/CurrentXfmr			
<i>This page controls the settings (VFC Delay, Integrate Start, Integrate Stop/Hold, and Reset) for the integrator for Booster Input in 911B, Room 222.</i>			
bix.integ_dly width	10,000us		
bix.integ_dly delay	88,000us		
bix.integ_dly event ¹⁴	51		
bix.integ_rst width	10us		
bix.integ_rst delay	1us		
bix.integ_rst event	51		
bix.integ_stp width	10,000us		
bix.integ_stp delay ¹⁵	1150us		
bix.integ_str width	1150us		
bix.integ_str delay	100us		
bix.integ_str event	51		
Ags/Location/A10_House/CDC.A10.DIGIO/			
<i>This page is for controlling the A15 current transformer, therefore making these settings appropriate for runs in which the A15 transformer is used (i.e. Heavy Ions and Polarized Protons)</i>			
AMX.CIRCXF_CTRL	x1		
AMX.CIRCXF_GN	AAA (x100)		
AMX.PROTON_TYPE	PPR		
AMX.XF_GAIN ¹⁶	LOW		

¹⁴ CLD event 37 is Pseudo Peaker; CLD event 51 is TBEAM ON on the Booster Event Link.

¹⁵ This setpoint should always match bix.integ_str width as the stop pulse is triggered from the start pulse. Also, column TrigSrc should have PrevEnd as its value.

¹⁶ Used in conjunction with PROTON_TYPE to select the calibration pulse value. See Table 1.

Master List of Settings for Current Transformers, con't.

COPPER			
Ags/Location/A10_House/CDC.A10.V202A/			
<i>This page is for controlling the AGS A15 calibration pulse (Ch. 1 from #1-8).</i>			
ADL.A15_XFCAL.CLK	1us		
ADL.A15_XFCAL.ST	1us		
ADL.A15_XFCAL.ST.C (CLD)	29		
FECs/Instrumentation/Booster/LTB/Other			
<i>This page is for controlling the settings for BCBM.</i>			
bmdCircXfGainS	AAA (x100)		
bmdCircXfPolS	NEG (x1)		
bliProtonTypeS	PPR		
bliXfGainS ¹⁷	LOW		
FECs/Instrumentation/Booster/LTB/202Timing			
<i>This page controls the trigger for the calibration pulse (on/off)</i>			
bmdCalStrt delay ¹⁸	2700us		
bmdCalStrt width	10us		
bmdCalStrt event	10		
Booster/Timing/booster_Gauss_gen			
<i>This page is for controlling the timing settings for Booster Early & Booster Late.</i>			
BGN.EARLY_CBM.SP			
BGN.LATE_CBM.SP			
Ags/Timing/ags_Gauss_gen			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.A_TRANS_CBM.SP			
AGN.B_TRANS_CBM.SP			
Ags/Instrumentation/Current_xfmr/current/Xfmr			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.CBM.SP ¹⁹	680000		
AGN.INJ_CBM.SP	2640000		
AGN.XCBM.SP	2250000		

¹⁷ Used in conjunction with bliProtonTypeS to select calibration pulse value. See Table 2.

¹⁸ This is a suggested value, the values may be changed as needed to move the calibration pulse

¹⁹ Numbers may vary depending on cycle and user preference (where to trigger V/F)

Master List of Settings for Current Transformers, con't.

NSRL OPERATIONS:	IRON	TITANIUM	CARBON
Ags/Location/911B/CDC.911SWIC.DIGIO/			
<i>1st device controls mux module in 911B, Room 222 to select the current transformer signals to be used in the given mode: Col. C2 = AGS., other for calibration control</i>			
BIX.XF_SELCTN	A15	A15	A15
AIX.XF_AGS.GAIN			
Booster/instrumentation/CurrentXfmr			
<i>1st device controls mux module in 911B, Room 222, others are for calibration control</i>			
bix.xf_selctn	29X	29X	29X
bix.xf_binpt.gain			
bix.xf_bcbm.gain			
Booster/instrumentation/CurrentXfmr			
<i>This page controls the settings (VFC Delay, Integrate Start, Integrate Stop/Hold, and Reset) for the integrator for Booster Input in 911B, Room 222.</i>			
bix.integ_dly width	10,000us	10,000us	10,000us
bix.integ_dly delay	88,000us	88,000us	88,000us
bix.integ_dly event ²⁰	51	51	51
bix.integ_rst width	10us	10us	10us
bix.integ_rst delay	1us	1us	1us
bix.integ_rst event	51	51	51
bix.integ_stp width	10,000us	10,000us	10,000us
bix.integ_stp delay ²¹	900us	900us	900us
bix.integ_str width	900us	900us	900us
bix.integ_str delay	100us	200us	200us
bix.integ_str event	51	51	51
Ags/Location/A10_House/CDC.A10.DIGIO/			
<i>This page is for controlling the A15 current transformer, therefore making these settings appropriate for runs in which the A15 transformer is used (i.e. Heavy Ions and Polarized Protons)</i>			
AMX.CIRCXF_CTRL	N/A	N/A	N/A
AMX.CIRCXF_GN	N/A	N/A	N/A
AMX.PROTON_TYPE	N/A	N/A	N/A
AMX.XF_GAIN	N/A	N/A	N/A

²⁰ CLD event 37 is Pseudo Peaker; CLD event 51 is TBEAM ON.

²¹ This setpoint should always match bix.integ_str width as the stop pulse is triggered from the start pulse. Also, column TrigSrc should have PrevEnd as its value.

Master List of Settings for Current Transformers, con't.

NSRL OPERATIONS:	IRON	TITANIUM	CARBON
<i>Ags/Location/A10_House/CDC.A10.V202A/</i>			
<i>This page is for controlling the AGS A15 calibration pulse (Ch. 1 from #1-8).</i>			
ADL.A15_XFCAL.CLK	1us	1us	1us
ADL.A15_XFCAL.ST	1us	1us	1us
ADL.A15_XFCAL.ST.C (CLD)	29	29	29
<i>FECs/Instrumentation/Booster/LTB/Other</i>			
<i>This page is for controlling the settings for BCBM.</i>			
bmdCircXfGainS	AAA (x100)	AAA (x100)	AAA (x100)
bmdCircXfPolS	POS (x10)	POS (x10)	POS (x10)
bliProtonTypeS	PPR	PPR	PPR
bliXfGainS ²²	HIG	HIG	HIG
<i>FECs/Instrumentation/Booster/LTB/202Timing</i>			
<i>This page controls the trigger for the calibration pulse (on/off)</i>			
bmdCalStrt delay ²³	2700us	2700us	2700us
bmdCalStrt width	10us	10us	10us
bmdCalStrt event	10	10	10
<i>Booster/Timing/booster_Gauss_gen</i>			
<i>This page is for controlling the timing settings for Booster Early & Booster Late.</i>			
BGN.EARLY_CBM.SP	4730	4730	4730
BGN.LATE_CBM.SP	110000	105000	105000
<i>Ags/Timing/ags_Gauss_gen</i>			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.A_TRANS_CBM.SP	N/A	N/A	N/A
AGN.B_TRANS_CBM.SP	N/A	N/A	N/A
<i>Ags/Instrumentation/Current_xfmr/current_Xfmr</i>			
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>			
AGN.CBM.SP ²⁴	N/A	N/A	N/A
AGN.INJ_CBM.SP	N/A	N/A	N/A
AGN.XCBM.SP	N/A	N/A	N/A

²² Used in conjunction with bliProtonTypeS to select calibration pulse value. See Table 2.

²³ This is suggested values, the values may be changed as needed to move the calibration pulse

²⁴ Numbers may vary depending on cycle and user preference (where to trigger V/F)

Master List of Settings for Current Transformers, con't.

NSRL OPERATIONS:		SILICON		
<i>Ags/Location/911B/CDC.911SWIC.DIGIO/</i>				
<i>1st device controls mux module in 911B, Room 222 to select the current transformer signals to be used in the given mode: Col. C2 = AGS., other for calibration control</i>				
BIX.XF_SELCTN	A15			
AIX.XF_AGS.GAIN				
<i>Booster/instrumentation/CurrentXfmr</i>				
<i>1st device controls mux module in 911B, Room 222, others are for calibration control</i>				
bix.xf_selctn	29X			
bix.xf_binpt.gain				
bix.xf_bcbm.gain				
<i>Booster/instrumentation/CurrentXfmr</i>				
<i>This page controls the settings (VFC Delay, Integrate Start, Integrate Stop/Hold, and Reset) for the integrator for Booster Input in 911B, Room 222.</i>				
bix.integ_dly width	10,000us			
bix.integ_dly delay	88,000us			
bix.integ_dly event ²⁵	51			
bix.integ_rst width	10us			
bix.integ_rst delay	1us			
bix.integ_rst event	51			
bix.integ_stp width	10,000us			
bix.integ_stp delay ²⁶	900us			
bix.integ_str width	900us			
bix.integ_str delay	100us			
bix.integ_str event	51			
<i>Ags/Location/A10_House/CDC.A10.DIGIO/</i>				
<i>This page is for controlling the A15 current transformer, therefore making these settings appropriate for runs in which the A15 transformer is used (i.e. Heavy Ions and Polarized Protons)</i>				
AMX.CIRCXF_CTRL	N/A			
AMX.CIRCXF_GN	N/A			
AMX.PROTON_TYPE	N/A			
AMX.XF_GAIN	N/A			

²⁵ CLD event 37 is Pseudo Peaker; CLD event 51 is TBEAM ON.

²⁶ This setpoint should always match bix.integ_str width as the stop pulse is triggered from the start pulse. Also, column TrigSrc should have PrevEnd as its value.

Master List of Settings for Current Transformers, con't.

NSRL OPERATIONS:		SILICON		
<i>Ags/Location/A10_House/CDC.A10.V202A/</i>				
<i>This page is for controlling the AGS A15 calibration pulse (Ch. 1 from #1-8)</i>				
ADL.A15_XFCAL.CLK	1us			
ADL.A15_XFCAL.ST	1us			
ADL.A15_XFCAL.ST.C (CLD)	29			
<i>FECs/Instrumentation/Booster/LTB/Other</i>				
<i>This page is for controlling the settings for BCBM.</i>				
bmdCircXfGainS	AAA (x100)			
bmdCircXfPolS	POS (x10)			
bliProtonTypeS	PPR			
bliXfGain ²⁷	HIG			
<i>FECs/Instrumentation/Booster/LTB/202Timing</i>				
<i>This page controls the trigger for the calibration pulse (on/off)</i>				
bmdCalStrt delay ²⁸	2700us			
bmdCalStrt width	10us			
bmdCalStrt event	10			
<i>Booster/Timing/booster_Gauss_gen/</i>				
<i>This page is for controlling the timing settings for Booster Early & Booster Late.</i>				
BGN.EARLY_CBM.SP	4730			
BGN.LATE_CBM.SP	110000			
<i>Ags/Timing/ags_Gauss_gen</i>				
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>				
AGN.A_TRANS_CBM.SP	N/A			
AGN.B_TRANS_CBM.SP	N/A			
<i>Ags/Instrumentation/Current_xfmr/current_Xfmr</i>				
<i>This page is for controlling the AGS timing triggers for the V/F converters</i>				
AGN.CBM.SP ²⁹	N/A			
AGN.INJ_CBM.SP	N/A			
AGN.XCBM.SP	N/A			

²⁷ Used in conjunction with bliProtonTypeS to select calibration pulse value. See Table 2.

²⁸ This is a suggested value, the values can be changed as needed to move the calibration pulse

²⁹ Numbers may vary depending on cycle and user preference (where to trigger V/F)

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AMX.PROTON_TYPE	AMX.XF_GAIN	Calibration Pulse
PRO	X	50mA
PPR	LOW	5mA
PPR	HIG	500uA

Table 1: Calibration Pulse Settings at SpreadSheet/Location/A10_House/CDC.A10.DIGIO

bliProtonTypeS	bliXfGainS	Calibration Pulse
PRO	X	400mA
PPR	LOW	5mA
PPR	HIG	500uA

Table 2: Calibration Pulse Settings at FECs/Instrumentation/Booster/LTB/Other

Notes:

1. Most devices can also be found by using pet path:

[Ags/Instrumentation/current_Xfmr](#)

For devices that cannot be found through this method, the paths above each section can be used.

2. Room 222 phone is x5764, HITL-3 phone is x5164

3. CLK = pulsewidth, ST = delay start time, C = CLD (complex logical device)

4. For polarized proton operation, the A15 settings must be at PPR-LOW because of the intensity interlock.

As of 3/05, the Radiation Safety Committee has approved the use of the two new B15 transformers in place of the A15 transformer for intensity interlock use during polarized proton operations.

5. To assist in moving the Booster Early trigger during calibration, it may be necessary to also change the following devices:

[/pet/Booster/Timing/booster_GT_generator/BGT.SFIELD.BUFFER](#)

[/pet/Booster/Timing/booster_GT_generator/BGT.CALIBRATE](#)

The first device (SFIELD.BUFFER) controls the minimum allowable value on the gauss timeline. Any value on the gauss timeline must be at least two greater than this value. The second device (CALIBRATE) is the absolute minimum value that SFIELD can be set to. Usually the Booster Early needs to be at a point lower than that set by SFIELD. First lower SFIELD slowly and see if the trigger can be set to a point that is acceptable. If SFIELD needs to be less than the CALIBRATE value, lower CALIBRATE, then SFIELD, then EARLY.

6. During summer shutdown of 2004, the transformer was moved from the A20 location in the ring to the A15 location. Most control device names have been changed to read as A15, but there may be some legacy items that will still say A20.